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REMARKS

By this Amendment, claims 1-4, 21 and 22 are amended to include patentable limitations. Claims 5-20 and 23-35 are withdrawn from further consideration as being drawn to non-elected species of the invention.

Election/Restrictions

Applicants' election of Species A, Embodiment 1, is affirmed. Furthermore, Applicants agree for purposes of further prosecution that claims 1-4, 21 and 22 are related to Species A or are generic. Therefore, claims 5-20 and 23-35 stand withdrawn from further consideration without prejudice subject to the filing of one or more divisional, continuation or continuation-in-part applications, or subject to reinstatement in the event that a generic claim is found allowable.

Claim Rejections – 35 U.S.C. §103

Pursuant to the Office Action, claims 1-4, 21 and 22 stand rejected under 35 U.S.C. 103(a) as being unpatentable (obvious) U.S. Patent 6,439,778 (Cairns). The Examiner asserts with regard to independent claims 1, 21 and 22, "Cairns teaches a fiber optic connector ... comprising: a multi-fiber ferrule ... movably disposed within the connector ... having an end face ... and an opposed rear face ..., the ferrule having a plurality of optical fiber bores extending therethrough ... for receiving the end portions of respective optical fibers adjacent the end face, the end face defining a plane that is generally perpendicular to each of the optical fiber bores ..., the ferrule further having at least one guide pin hole ... for receiving a guide pin ... to align the multi-fiber ferrule with a mating multi-fiber ferrule ..., the guide pin hole defining an axis that is parallel to each of the optical fiber bores ..., the fiber optic connector defining a longitudinal axis that is generally parallel to the axis defined by the guide pin hole or fiber bores ... and at least one force centering element or means ... for applying a resultant biasing force to the ferrule in the direction of the longitudinal axis or axial direction parallel to each of the optical fiber bores such that the ferrule is not subjected

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to a moment about a lateral axis defined by the end face of the ferrule and generally perpendicular to the longitudinal axis." The Examiner further asserts that while the reference does not explicitly state "moment about a lateral axis," it is well known at the time the invention was made that a moment is also known as a torque. Therefore, the Examiner concludes that "it would have been obvious to one skilled in the art at the time the invention was made to have at least one force centering element or means for applying a resultant biasing force to the ferrule in the direction of the longitudinal axis or axial direction parallel to each of the optical fiber bores such that the ferrule is not subjected to a moment about a lateral axis defined by the end face of the ferrule and generally perpendicular to the longitudinal axis. The motivation is to reduce the risk of misalignment between optical contacts and avoid torque or twisting forces which may result in improper alignment."

Applicants respectfully traverse the rejection with regard to the independent claims 1, 21 and 22, as amended herein. The "force centering means" in Cairns is the interface between a cylindrical, elongate bushing 42 and a generally spherical ball member 44 having a flat end face. The bushing is disposed between a cylindrical biasing spring 40 and the spherical outer surface of the ball member. The ball member is disposed between the bushing and a multifiber ferrule 18 with the flat end face of the ball member in engagement with the flat rear end face of the ferrule. Specifically, Cairns teaches: "[i]n this invention, a flat end face of an otherwise spherical ball member bears against the flat rear end face of the respective ferrule, and the ball member engages in a radiused seat at one end of [the] bushing which is biased by the spring." Column 2 at lines 48-55. Cairns further teaches: "[t]he flat, face-to-face engagement between ball member 44 and ferrule 18 will help to compensate for any non-planar engagement between the end of spring 44 [sic: 40] and the bushing 42, ensuring that the biasing force is applied in a direction transverse to the end face of the ferrule, helping to avoid any misalignment or torque between the ferrules as they are mated together." Column 4 at lines 20-26.

Cairns alone does not identically disclose or arguable suggest the claimed invention. In particular, Cairns does not teach or suggest *at least one pair of spaced apart force centering*

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elements, the force centering elements engaging one of the ferrule and the biasing force means to balance the biasing force about the lateral axis defined by the end face of the ferrule. The bushing 42 and the ball member 44 taught by Cairns do not define a pair of spaced apart force centering elements that engage either the ferrule 18 or the biasing spring 40. Instead, the bushing and the ball member oppose and engage one another to redirect any non-axial biasing force in a direction transverse to the end face of the ferrule. In addition, the bushing engages the spring on one end and the ball member on its other end, while the spherical portion of the ball member engages the bushing and the flat end of the ball member engages the rear end of the ferrule. Thus, claim 1 as amended herein is patentable for at least these reasons. Claims 2-4 depend directly or indirectly from patentable base claim 1, and thus, are likewise allowable for at least the same reasons. Furthermore, Cairns does not disclose or suggest a pair of force centering elements disposed medially on a rearward portion of a spring seat and each comprising a protrusion that extends outwardly [i.e., rearwardly] from the rearward portion and engages the biasing spring. Thus, dependent claims 2-4 are patentable for at least these additional reasons.

Similarly, claim 21 as amended herein is patentable for at least the reason that Cairns does not disclose or suggest *at least a pair of spaced apart force centering elements disposed symmetrically about the lateral axis to apply a resultant biasing force to the ferrule in the direction of the longitudinal axis such that the ferrule is not subjected to a moment about the lateral axis.* The force centering elements taught by Cairns (i.e., bushing 42 and ball member 44) are not spaced apart and are not disposed symmetrically about a lateral axis defined by the end face of the ferrule. Thus, claim 21 as amended herein is patentable. Likewise, claim 22 as amended herein is patentable for at least the same reasons since Cairns does not disclose or suggest *at least a pair of spaced apart force centering means disposed symmetrically about the longitudinal axis for balancing the biasing force applied to the ferrule.*

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CONCLUSION

The pending claims 1-4, 21 and 22 are allowable for at least the reasons stated herein. This response is being timely filed and is fully responsive to the Office Action. Accordingly, Applicants submit that the application is now in condition for immediate allowance, and the undersigned respectfully solicits such action on their behalf.

This response does not result in more independent or total claims than paid for previously. Accordingly, no fee for excess claims is due. The Examiner is hereby authorized to charge any other fee due in connection with the filing of this response to Deposit Account No. 19-2167. If an extension of time not already accounted for is required with this response, Applicants hereby petition for such extension of time and the Examiner is likewise authorized to charge the petition fee to Deposit Account No. 19-2167.

Respectfully submitted,



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